

## Supplementary Materials and Methods

### Cells and cell culture

LD-rich Zajdela ascites hepatoma is related to aggressive cancer cells leading to the death of tumor-bearing rats on day 7-8 by using the standard protocol of ZAH-cell transplantation into the peritoneal cavity of healthy Wistar line rats. These rats were bred and maintained in the vivarium of the Institute of Theoretical and Experimental Biophysics. The ZAH cell line for the initial transplantation was obtained from the Collection of Cancer Cell Lines (~~Cancer Center in Moscow, Schepkina~~, Moscow).



### Preparation of living cells for interference microscopy

After removal of living ZAH-cells from the interperitoneal cavity in tumor-bearing rats, the suspension of these cells was placed between the slide and the cover glass with the aim to visualize the separated and/or clustered LDs having the increased lipid refractive index in single living ZAH-cells by using interference microscopy. The details of using this microscopy for visualization LDs at the expense of their increased refractive index are in the text of the article.

### Lipid-dissolving standard fixation

Upon extraction of ZAH cells from tumor-bearing rats, the cells were used to prepare a smear on a slide; the smear was then fixed for 10 min in a Carnoy mixture (ethanol-chloroform-acetic acid at a ratio of 6:3:1, respectively).

### Acridine orange staining

A monolayer of ZAH cells fixed on a slide was washed for 5 min with a citrate-phosphate buffer (pH 4.2) before staining with  $3 \times 10^{-4}$  mol/L acridine orange (Fluka ~~Chemia~~ AG, Buchs, Switzerland). Under these staining conditions, acridine orange revealed the nucleic acids with green fluorescence at 530 nm and red fluorescence at 640 nm [1].



## **Reference**

1. Rigler R, Jr. Microfluorometric characterization of intracellular nucleic acids and nucleoproteins by acridine orange. *Acta Physiol Scand Suppl.* 1966;267:1-122.